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REDESCRIPTION AND NOTES ON THE BIOLOGY OF *AMECOCERUS SENILIS* (LECONTE) (COLEOPTERA: MELYRIDAE: DASYTINAE)

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Abstract.—A redescription of *Amecocerus senilis* (LeConte) (Coleoptera: Melyridae: Dasytinae) is provided based on the author's examination of 875 specimens of this species. The male genitalia of *A. senilis* are illustrated and compared with those of *A. suckeri* Hatch, a related species from Washington and Oregon. Adults of *A. senilis* occur abundantly on flowers in open forests of *Pinus ponderosa* Douglas in the vicinity of Estes Park, Colorado. Flowers on which adults of *A. senilis* were collected during this study include *Achillea lanulosa* Nuttall, *Cerastium arvense* L., *Erigeron annuus* (L.) Persoon, *Eriogonum heracleoides* Nuttall, *Gaillardia aristata* Pursh, *Geranium viscosissimum* Fischer and Meyer, *Grindelia squarrosa* (Pursh) Dunal, *Potentilla gracilis* Douglas, and *Solidago occidentalis* (Nuttall) Torrey and Gray.

INTRODUCTION

The subfamily Dasytinae of the beetle family Melyridae must certainly rank among the most poorly-known groups of Coleoptera in North America. At the present time, the most recent works treating most of the genera and species of Nearctic Dasytinae are the monograph of the subfamily by Casey (1895) and a series of shorter papers by Casey's protégé Blaisdell (summarized by Arnett, 1968). Casey is well-known as a taxonomic "splitter" (see discussion in Hatch, 1926) and it seems probable that many of the numerous species and genera described by Casey in Dasytinae will be placed in synonymy when the Nearctic Dasytinae are comprehensively revised by workers with access to large series of specimens from many localities.

Recent studies of species of Dasytinae from North America are few in number and nothing has been published on the biology of most of the species in this group. The following notes on *Amecocerus senilis* (LeConte) were prepared following two collecting trips to Estes Park, Colorado, during July, 1996, and August, 1998.

Amecocerus senilis (LeConte, 1852)

Figs. 1–2

Dasytes senilis LeConte, 1852:170 [Holotype, male, labeled with pale green disc (=Nebraska, Kansas, North Dakota, South Dakota, Oklahoma, Wyoming, Montana), MCZ Type No. 3518, examined; type locality given in original description as Fort Laramie, Nebraska Territory].

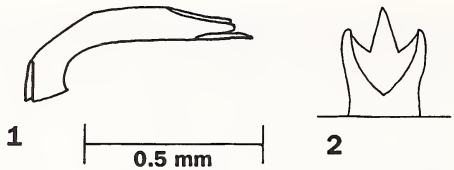
Listrus senilis: LeConte, 1866:358; Casey, 1895:542, 551; 1897:682; Champion, 1914:114, 118 (in part); Blaisdell, 1921:175–176.

Amecocerus senilis: Pic, 1937:102.

Diagnosis. *Amecocerus senilis* appears to be closely allied to *A. suckeri* Hatch, a species with similar uniform greyish-white dorsal vestiture described from eastern Washington and eastern Oregon. The femora and tibiae are reddish in *A. suckeri* and black in *A. senilis.* In lateral view, the lateral lobes of the male genitalia of *A. suckeri* are broader than those of *A. senilis* and are more strongly divergent from the median lobe. According to Blaisdell (1921:176), three species described from Arizona and Colorado, *A. clavicornis* (Casey), *A. uniformis* (Casey), and *A. coloradensis* (Blaisdell), are also similar to *A. senilis* in having a uniformly white or greyish-white dorsal vestiture. However, these three species have dorsal setae which are much sparser and finer than those of *A. senilis* (Blaisdell, 1921:176).

Description. *Length.* 2.68 mm to 3.20 mm. *Body.* Elongate, slender, subcylindrical; female distinctly broader than male. *Integument.* Black, shining, frequently with metallic blue or coppery sheen. *Setae.* Uniform dorsally, white to greyish-white, suberect and moderately dense; white setae slightly denser ventrally; tarsi and sixth visible abdominal sternite with dense, black setae. *Head.* As broad as pronotal apex. *Eyes.* Small, black, lateral, finely granulate, feebly emarginate anteriorly. *Frons.* Densely, rugosely punctate, with a small glabrous median tubercle along anterior margin. *Mouthparts.* Clypeus and labrum small, brown, elongate; mandibles recurved, not visible from above in repose; labrum and maxillae of normal size, terminal palpomeres subulate. *Antennae.* Extending nearly to base of pronotum; antennomere 1 globose, greatly enlarged, antennomere 2 globose, small; antennomeres 3–8 moderately and somewhat increasingly strongly serrate; antennomeres 9–11 expanded laterally, forming a very loose club which is more strongly transverse in male. *Pronotum.* Convex, slightly broader than long, broadest at basal third and tapering to base and apices; disc coarsely, densely punctate, punctures often becoming strongly rugose; lateral margin minutely serrate; anterior, posterior, and lateral margins outlined by a row of reclinate overlapping white setae. *Scutellum.* Transverse, small, covered in dense white pubescence. *Elytra.* Elongate, subcylindrical; slightly broader than pronotum at base; strongly convex, with a distinct transverse impression at basal third; elytral humeri strongly angulate; lateral margins broadening gradually to apical third, then broadly tapering to separately rounded apices; lateral margins of elytra outlined by a row of reclinate overlapping white setae; elytra coarsely, densely, and irregularly punctate basally, punctures becoming much smaller towards apices. *Venter.* Minutely, densely punctate. *Fifth visible abdominal sternite.* Elongate and apically emarginate in males, shorter and rounded apically in females. *Legs.* Short, femora somewhat clavate, metafemora strongly clavate in male; tibiae longer than femora, slightly compressed in cross-section, slightly broader towards apices, with a pair of reddish-brown tibial spurs and dorsal black spines at apices; pretarsal claws with pale ventral appendages extending the length of the claws. *Male genitalia.* Similar to those of *A. suckeri* Hatch (1961:402–403); lateral lobes slender, divergent, broadly rounded apically; sclerotized portion of median lobe elongate, triangular, slightly depressed towards apex and extending beyond apices of lateral lobes; median and lateral lobes not strongly divergent in lateral view (Figs. 1–2).

Material Examined. UNITED STATES, **Arizona**: 11 adults, Grand Canyon, 18.viii.1929 (CUIC); 18 adults, Hermit Rim Road, Grand Canyon, 1.viii.1914, J. C. Bradley (CUIC); 2 adults, no locality specified (CUIC). **Colorado**: 1 adult, Alamosa Co., Great Sand Dunes National Monument, 28.vii.1988 (CUIC); 13 adults, Larimer



Figs. 1–2. *Amecocerus senilis* (LeConte), male genitalia, lateral view (Fig. 1) and dorsal view of apex (Fig. 2).

Co., Roosevelt National Forest, Comanche Peak Wilderness, along North Fork of Big Thompson River, 20.vii.1996, J. R. Mawdsley (JRMA); 25 adults, Larimer Co., Estes Park, 22.vii.1996, J. R. Mawdsley (JRMA); 93 adults, Larimer Co., Estes Park, 24.vii.1996, J. R. Mawdsley (JRMA); 660 adults, Larimer Co., Estes Park, 5.viii.1998, J. R. Mawdsley (AMNH, CUIC, JRMA, MCZC, and USNM); 4 adults, Colorado Springs, 7.vii.1927 (CUIC); 4 adults, Golden, 23.vi.1911 (CUIC); 18 adults, no locality specified (CUIC). **Nebraska**: 1 ♂, Fort Laramie (MCZC). **New Mexico**: 2 adults, Bent, 1–15.viii.1927 (CUIC); 2 adults, near Hot Springs, Las Vegas, 7,000 feet, viii.1882, F. H. Snow (CUIC); 16 adults, Mescalera Reservation, 15.viii.1927 (CUIC); 1 adult, Mescalera Reservation, 10.ix.1927 (CUIC). **Utah**: 1 adult, Bryce Canyon, 20.viii.1929 (CUIC); 3 adults, Bryce Canyon, 21.viii.1929 (CUIC).

Notes on synonymies. Champion (1914) placed as synonyms of this species two taxa proposed in the genus *Listrus: Listrus canescens* Motschulsky, described from California, and *Listrus clavicornis* Casey, described from Arizona. However, Champion does not state in his revision that he had examined the types of these species, and since his treatment of *A. senilis* and its supposed synonyms is based entirely on specimens from Mexico and Central America, it is evident that these names should be excluded from synonymy until the types can be examined. It is probable that Champion's synonymy of *L. canescens* refers rather to the treatment of this species by H. S. Gorham (1882; 1886) in the Biologia Centrali-Americana than to the species from California described by Motschulsky. A revision of these names which incorporates examination of the type specimens of *L. canescens* and *L. clavicornis* as well as those specimens on which Gorham's treatment of *L. canescens* was based is clearly desirable, but such a revision falls outside the scope of the present paper.

Notes on relationships. Blaisdell (1921:176) included this species in his "*senilis* group," which was diagnosed on the basis of unicolorous pale elytral pubescence (most other species of *Amecocerus* have white, black, or brown pubescence arranged in bands, spots, or other patterns). The three other species included in this group by Blaisdell seem doubtfully distinct from *A. senilis* and may be synonyms of it. Hatch (1961:75–76; 402–403) described and illustrated the male genitalia of *A. suckeri* Hatch, the only species of *Amecocerus* with unicolored pale pubescence known from the Pacific Northwest. Hatch's work was the first to use characters of the male genitalia in separating species of *Amecocerus.* However, Hatch made no attempt to establish a complete synonymy for the species he studied, instead describing most of the forms he examined as new species and leaving the question of their validity for future workers. *Amecocerus suckeri* appears to be a valid species, distinguishable

from *A. senilis* on the basis of its reddish femora and tibiae and its different male genital morphology (in lateral view, the lateral lobes are broader than those of *A. senilis* and are more strongly divergent from the median lobe).

NOTES ON BIOLOGY

Amecocerus senilis (LeConte) is abundant in the Village of Estes Park and at lower elevations in canyons of the surrounding Roosevelt National Forest and Rocky Mountain National Park, Larimer Co., Colorado. It appears to be confined to open forests of *Pinus ponderosa* Douglas and is replaced at higher elevations (above 9,500 feet) by the larger, black species *Dasytes hudsonicus* LeConte.

On July 22 and 24, 1996, I collected 118 adults of *A. senilis* on flowers of *Achillea lanulosa* Nuttall, *Gaillardia aristata* Pursh, and *Geranium viscosissimum* Fischer and Meyer in a one-acre field belonging to Katharine S. and Charles A. Johnson at an approximate elevation of 8,000 feet in the Village of Estes Park. On August 5, 1998, I returned to this same field and collected all adult specimens of *A. senilis* from all species of plants in flower. A total of 660 adults were collected on flowers of the following species: *Achillea lanulosa* Nuttall (290 adults); *Cerastium arvense* L. (26 adults); *Erigeron annuus* (L.) Persoon (13 adults); *Eriogonum heracleoides* Nuttall (55 adults); *Gaillardia aristata* Pursh (48 adults); *Geranium viscosissimum* Fischer and Meyer (43 adults); *Grindelia squarrosa* (Pursh) Dunal (146 adults); *Potentilla gracilis* Douglas (1 adult); *Solidago occidentalis* (Nuttall) Torrey and Gray (38 adults). Based on observations of adults in the field and examination of stomach contents, adult *A. senilis* consumed both nectar and pollen from these flowers. Species of plants in flower in this field on August 5, 1998, which lacked adults of *A. senilis* included *Campanula rotundifolia* L. and *Verbascum thapsus* L.

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LITERATURE CITED

Arnett, R. H. 1968. The Beetles of the United States (a manual for identification). Ann Arbor: American Entomological Institute. xii + 1112 pp.

Blaisdell, F. E. 1921. New species of Melyridae, Chrysomelidae, and Tenebrionidae (Coleoptera) from the Pacific coast, with notes on other species. Stanford University Publications, Biological Sciences 1(3):136–231.

Casey, T. L. 1895. Coleopterological Notices VI. Annals of the New York Academy of Sciences 8:435–838.

Casey, T. L. 1897. Coleopterological Notices VII. Annals of the New York Academy of Sciences 9:285–684.

Champion, G. C. 1914. Revision of the Mexican and Central-American Malachiidae and Melyridae, with descriptions of new species. Transactions of the Entomological Society of London 1914:13–127.

Gorham, H. S. 1882. Melyridae, Cleridae. Biologia Centrali-Americana, Insecta Coleoptera 3(2):113–168.

Gorham, H. S. 1886. Supplement to Malacodermata. Biologia Centrali-Americana, Insecta Coleoptera 3(2):313–360.

Hatch, M. H. 1926. Thomas Lincoln Casey as a Coleopterist. Entomological News 37:175–179 + 198–202.

Hatch, M. H. 1961. The Beetles of the Pacific Northwest, Vol. 3. Seattle: University of Washington Press. 503 pp.

LeConte, J. L. 1852. Catalogue of the Melyrides of the United States, with descriptions of new species. Proceedings of the Academy of Natural Sciences of Philadelphia 6:163–171.

LeConte, J. L. 1866. Revision of the Dasytini of the United States. Proceedings of the Academy of Natural Sciences of Philadelphia 19:349–361.

Pic, M. 1937. Dasytidae: Dasytinae. Coleopterorum Catalogus 155:1–130.

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